Material Safety Data Sheet

TRI CHLORO ETHYLENE (RXSOL-19-1456-210)

1. Product and Company Identifaction

Product Name	Tri Chloro Ethylene
Product Type	RXSOL-19-1456-210

Company Details:
RX MARINE INTERNATIONAL
105, A wing , BSEL , TECH PARK.
VASHI ,NEW BOMBAY 400703 INDIA

Stock Point : Mumbai, Kandla, Kolkata, Chennai, Vizag, Fujairah, Muscat, Nairobi

Phone	+91 22 65113333/ 5555 / 9999 / 27611360 / 27815540
Fax	+91 22 2781 1318 :::AOH :0091 9322594669
Email	mail@rxmarine.com

2. Composition / informationon ingredients

Substance:

Formula	Cl2CCHCl	C2HCl3 (Hill)
Index-No.	602-027-00-9	
EC-No.	201-167-4	
Molar mass	131.39 g/mol	

Hazardous components (REGULATION (EC) No 1272/2008):

Chemical Name (Concentration)	CAS-No.	Registration number	Classification
trichloroethylene (= 100 %)	79-01-6	01-2119490731-36-XXXX	Skin irritation, Category 2, H315 Eye irritation, Category 2, H319 Germ cell mutagenicity, Category 2, H341Carcinogenicity, Category 1B, H350Specific target organ toxicity - single exposure, Category 3, H336 Chronic aquatic toxicity, Category 3, H412

For the full text of the H-Statements mentioned in this Section, see Section16 :

Hazardous components (1999/45/EC) :

Chemical Name (Concentration)	CAS-No.	Classification
trichloroethylene (= 100 %)	79-01-6	Carc.Cat.2; R45 Mut.Cat.3; R68 Xi, Irritant; R36/38 R67 R52-53

For the full text of the R-phrases mentioned in this Section, see Section 16:

Mixture:
not applicable

3. Hazards Identification

Classification of the substance or mixture:
Classification (REGULATION (EC) No 1272/2008):
Carcinogenicity, Category 1B, H350
Germ cell mutagenicity, Category 2, H341
Specific target organ toxicity - single exposure, Category 3, Central nervous system, H336 Skin irritation, Category 2, H315
Eye irritation, Category 2, H319
Chronic aquatic toxicity, Category 3, H412

For the full text of the H-Statements mentioned in this Section, see Section16:

Classification (67/548/EEC or 1999/45/EC):

Carc.Cat.2	Carcinogenic Category 2	R45
Mut.Cat.3	Mutagenic Category 3	R68
Xi	Irritant	R36/38
		R67
		R52/53

For the full text of the R-phrases mentioned in this Section, see Section 16:

Label elements:
Labelling (REGULATION (EC) No 1272/2008):

Hazard pictograms:
Signal word:
Danger

Hazard statements:
H350 May cause cancer.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H341 Suspected of causing genetic defects.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:
Prevention:
P201 Obtain special instructions before use.
P273 Avoid release to the environment.
Response
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
Restricted to professional users.

Reduced labelling (?125 ml):
Hazard pictograms
Signal word
Danger

Hazard statements:
H350 May cause cancer.
H341 Suspected of causing genetic defects.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:
P201 Obtain special instructions before use.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Restricted to professional users.

Other hazards:
None known.

4. First Aid Measures

Description of first aid measures:	After inhalation: fresh air. Consult a physician.
After skin contact:	wash off with plenty of water. Remove contaminated clothing. Consult a physician.
After eye contact:	rinse out with plenty of water. Call in ophthalmologist.

After swallowing:	caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately. Laxative: Sodium sulfate (1 tablespoon/1/4 l water). activated charcoal (20 - 40 g in 10% slurry).
Most important symptoms and effects, both acute and delayed:	irritant effects, Cough, Shortness of breath, Drowsiness, Dizziness, narcosis, agitation, spasms, inebriation, Nausea, Vomiting, Headache, drowziness
Indication of any immediate medical attention and special treatment needed:	No information available.

5. Fire-fighting Measures

Extinguishing media
Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture
Not combustible.
Ambient fire may liberate hazardous vapours.
Fire may cause evolution of:
Hydrogen chloride gas

Advice for firefighters:
Special protective equipment for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
Further information:
Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

Personal precautions, protective equipment and emergency procedures:	Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapours, aerosols. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.Advice for emergency responders: Protective equipment see section8.
Environmental precautions:	Do not empty into drains.
Methods and materials for containment and cleaning up:	Cover drains. Collect, bind, and pump off spills.Observe possible material restrictions (see sections 7 and 10).Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area. Do not inhale vapours.
Reference to other sections:	Indications about waste treatment see section 13.

7. Handling and Storage

Precautions for safe handling:	Advice on safe handling: Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.
Observe label precautions.:	Hygiene measures: Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. Conditions for safe storage, including any incompatibilities:
Storage conditions:	Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.Recommended storage temperature see product label.
Specific end use(s):	See exposure scenario in the Annex to this MSDS.

8. Exposure controls and personal protection

Control parameters:
Components with workplace control parameters Components Basis Value Threshold limits Remarks

BASIS	Value	Threshold limits	Remarks

trichloroethylene (79-01-6):

EH40 WEL	Short Term Exposure Limit (STEL):	150 ppm 820 mg/m³	
	Skin designation:		Can be absorbed through the skin
	Time Weighted Average (TWA):	100 ppm 550 mg/m³	

Derived No Effect Level (DNEL) Worker DNEL:acute Systemic effects inhalation 164.1

Worker DNEL, acute	Systemic effects	inhalation	164.1 mg/m³
Worker DNEL, acute	Local effects	dermal	164.1 mg/m³
Worker DNEL, longterm	Systemic effects	inhalation	7.8 mg/kg Body weight
Worker DNEL, longterm	Systemic effects	inhalation	54.7 mg/m³

Recommended monitoring procedures
Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.
Predicted No Effect Concentration (PNEC):

PNEC Fresh water	0.115 mg/l
PNEC Marine water	0.0115 mg/l
PNEC Aquatic intermittent release	0.208 mg/l
PNEC Sewage treatment plant	2.6 mg/l
PNEC Fresh water sediment	2.04 mg/kg
PNEC Marine sediment	0.204 mg/kg
PNEC Soil	0.344 mg/kg
PNEC oral	13.8 mg/kg

Exposure controls:
Engineering measures:
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.
See section 7.1.

Individual protection measures:
Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection:
Safety glasses

Hand protection:

full contact:	Glove material: Glove thickness: Break through time:	Viton(R) 0.70 mm >480mm
splash contact:	Glove material: Glove thickness: Break through time:	Nitrile Rubber 0.40 mm >10 mm

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 890 Vitoject® (full contact), KCL 730 Camatril® -Velours (splash contact).The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves

Other protective equipment:
protective clothing

Respiratory protection:
required when vapours/aerosols are generated.Empfohlener Filtertyp: Filter A (acc. to DIN 3181) for vapours of organic compounds The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls:
Do not empty into drains.

9. Physical and chemical properties

Information on basic physical and chemical properties:

Form	Liquid
Colour	Colourless
Odour	No odour warning
Odour Threshold	28 - 2160 ppm
pH	No information available
Melting point	-86 °C
Boiling point/boiling range	87 °C at 1,013 hPa
Flash point	Not determinable
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	7.9 %(V)
Upper explosion limit	>99 %(V)(Saturation-at high volume fractions, explosion turns into a decomposition reaction)
Vapour pressure	77 hPa at 20 °C
Relative vapour density	4.53
Density	1.21 - 1.26 g/cm³ at 20 °C
Relative density	1.46 g/cm³ at 20 °C
Water solubility	1.28 g/l at 25 °C
Partition coefficient: n-octanol/water	log Pow: 2.29 (experimental) (IUCLID) Bioaccumulation is not expected.
Auto-ignition temperature	No information available.
Decomposition temperature	> 110 °C.
Viscosity, dynamic	0.55 mPa.s at 25 °C

Explosive properties	Not classified as explosive.
Oxidizing properties	None

Other data:
Ignition temperature
410 °C

10. Stability and reactivity

Reactivity:	See section 10
Chemical stability:	Heat-sensitive
Possibility of hazardous reactions:	Violent reactions possible with: Oxygen, (as liquefied gas) Alkaline earth metals, alkali amides, semimetallic hydrogen compounds, perchloric acid, Light metals, aluminium chloride, Strong oxidizing agents, POTASSIUM NITRATE
Risk of explosion with:	Alkali metals, Aluminium, Barium, alkali hydroxides, Lithium, magnesium, Powdered metals, sodium amide,nitrogen dioxide, Boranes Strong oxidizing agents, Oxygen, with, alkali hydroxides Oxygen, with, Pressure Risk of ignition or formation of inflammable gases or vapours with: Titanium, Beryllium, Epoxy constituents
Conditions to avoid :	Strong heating (decomposition)., Distillation (Risk of explosion).
Incompatible materials:	Various plastics
Hazardous decomposition products:	In the event of fire: See section 5.

11. Toxicological information

Information on toxicological effects :
Acute oral toxicity:
LD50 rat: 4,920 mg/kg (IUCLID)
LDLO human: 7,000 mg/kg (RTECS)

absorption:
Symptoms: Nausea, Vomiting, Risk of aspiration upon vomiting., Aspiration may cause pulmonary oedema and pneumonitis.

Acute inhalation toxicity:
LC50 rat: 43.84 mg/l; 4 h (IUCLID)

Symptoms: Possible damages:, mucosal irritations, After a latency period:, Lung oedema

Acute dermal toxicity:
LD50 rabbit: > 29,000 mg/kg (IUCLID)
absorption
Skin irritation
rabbit
Result: Severe irritations
(IUCLID)
Drying-out effect resulting in rough and chapped skin.
Causes skin irritation.
Eye irritation
rabbit
Result: Eye irritation
(IUCLID)
Causes serious eye irritation.
Sensitisation
This information is not available.
Germ cell mutagenicity
Genotoxicity in vitro
Ames test
Result: negative
(IUCLID)

Carcinogenicity:
This information is not available.

Reproductive toxicity:
This information is not available.
Teratogenicity
This information is not available.
CMR effects

Carcinogenicity:
May cause cancer.

Mutagenicity:
Suspected of causing genetic defects.
Specific target organ toxicity - single exposure

Target Organs: Central nervous system
May cause drowsiness or dizziness.
Specific target organ toxicity - repeated exposure
This information is not available.

Aspiration hazard:
This information is not available.

Further information:
After absorption:
Headache, Dizziness, Cardiac irregularities, Nausea, agitation, spasms, inebriation, narcosis
Absorption can result in damage to:
Liver, Kidney
After long-term exposure to the chemical:

Toxic effect on:
Central nervous system

Further data:
Handle in accordance with good industrial hygiene and safety practice.

12. Ecological information

Toxicity:
Toxicity to fish:
LC50 Pimephales promelas (fathead minnow): 41 mg/l; 96 h (ECOTOX Database)
Toxicity to daphnia and other aquatic invertebrates
EC50 Daphnia magna (Water flea): 18 mg/l; 48 h (IUCLID)
Toxicity to algae:
IC50 Pseudokirchneriella subcapitata (green algae): 175 mg/l; 96 h (IUCLID)
Toxicity to bacteria:
EC50 Photobacterium phosphoreum: 975 mg/l; 5 min (IUCLID)

Persistence and degradability:
Biodegradability:
19 %; 28 d
OECD Test Guideline 301D
Not readily biodegradable.
4 %; 28 d
Zahn-Wellens Test:
Not readily eliminated from water.

Bioaccumulative Potential:
Partition coefficient: n-octanol/water
log Pow: 2.29
(experimental)
(IUCLID) Bioaccumulation is not expected.

Mobility in soil:
Distribution among environmental compartments
Adsorption/Soil
log Koc: 1.97
(experimental)
Mobile in soils

Results of PBT and vPvB assessment:
Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

Other adverse effects:
Henry constant
998 Pa*m³/mol
(Lit.) Distribution preferentially in air.

Additional ecological information
Discharge into the environment must be avoided.

13. Disposal considerations

Waste treatment methods:
Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

14. Transport information

Land transport (ADR/RID):

UN number	UN 1710
Proper shipping name	TRICHLOROETHYLENE
Class	6.1
Packing group	III
Environmentally hazardous	--
Special precautions for user	Yes
Tunnel restriction code	E

Inland waterway transport (ADN): Not relevant

Air transport (IATA):

UN number	UN 1710
Proper shipping name	TRICHLOROETHYLENE
Class	6.1
Packing group	III
Environmentally hazardous	--
Special precautions for user	no
Tunnel restriction code	E

Sea transport (IMDG):

UN number	UN 1710
Proper shipping name	TRICHLOROETHYLENE
Class	6.1
Packing group	III
Environmentally hazardous	--
Special precautions for user	Yes
Tunnel restriction code	E
EmS	EmS

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
Not relevant

15. Regulatory information

EU regulations:

Major Accident Hazard	96/82/EC
Legislation	Directive 96/82/EC does not apply
Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work. Take note of Dir 92/85/EEC on the safety and health at work of pregnant workers.
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	Not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC	Not regulated
Regulation (EC) No 689/2008 concerning the export and import of dangerous chemicals	Not regulated
Substances of very high concern (SVHC)	This product does contain substances of very high concern above the respective regulatory limit (> 0.1 % (w/w), Regulation (EC) No 1907/2006 (REACH), Article 57). Contains:trichloroethylene

Chemical Safety Assessment:
For this product a chemical safety assessment was not carried out.

16. Other information

The information provided about the product on this Safety Data Sheet has been compiled from knowledge of the individual constituents The data given here is based on current knowledge and experience. This Safety Data Sheet describes the product in terms of safety requirements and does not signify any warranty with regard to the product's properties The data given here only applies when product used for proper application(s). The product is not sold as suitable for other applications usage in such may cause risks not mentioned in this sheet. Do not use for other application(s) without seeking advice from manufacturer.

DISCLAIMER OF LIABILITY :The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.